

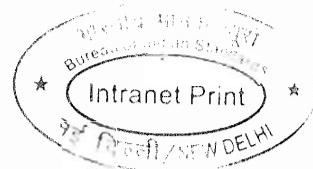
IS : 5694 - 1970
(Reaffirmed 2014)

Indian Standard

SPECIFICATION FOR ENGINEERS'
DRAWING INSTRUMENTS, DOTTING PENS

(First Reprint JULY 1982)

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INDIAN STANDARDS INSTITUTION
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
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TO

IS:5694-1970 SPECIFICATION FOR ENGINEERS' DRAWING
INSTRUMENTS, DOTTING PENS

Alterations

(Page 3, clause 2.1) - Substitute the following
for the existing clause:

'2.1 The material for manufacture of drawing wheel and
its pin shall be steel having a carbon content 0.60 to
0.75 percent or a suitable grade of stainless steel.'

(Page 5, clause 5.1) - Substitute the following
for the existing clause:

'5.1 The drawing wheel shall be hardened and tempered
if made of carbon steel.'

Addendum

(Page 3, clause 2.3) - Add the following new
clause after 2.3:

'2.4 The wheel holder shall be of chromium plated
brass.'

(EDC 36)

Reprography Unit, ISI, New Delhi, India

Indian Standard

**SPECIFICATION FOR ENGINEERS'
DRAWING INSTRUMENTS, DOTTING PENS**

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Indian Standard
SPECIFICATION FOR ENGINEERS'
DRAWING INSTRUMENTS, DOTTING PENS

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 2 July 1970, after the draft finalized by the Optical and Mathematical Instruments Sectional Committee had been approved by the Mechanical Engineering Division Council.

0.2 Dotting pen is a drawing instrument used by the architects, engineers and draughtsmen for drawing dots of uniform thickness at regular intervals in ink.

0.3 This standard covers the requirements of dotting pen for drawing uniform dots or dashes or both at different regular intervals complying with the requirements of IS : 696-1960*.

0.4 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS : 2-1960†. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard covers the requirements of dotting pen having a handle and drawing wheels. The dotting pen should have the arrangement to interchange the wheels conveniently.

2. MATERIAL AND HARDNESS

2.1 The material for manufacture of drawing wheel shall be steel having a carbon content of 0·60 to 0·75 percent or a suitable grade of stainless steel.

2.2 The handle shall be made of light weight suitable material.

2.3 The drawing wheel shall have minimum hardness of 230 HV.

*Code of practice for general engineering drawings (revised).

†Rules for rounding off numerical values (revised).

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3. DIMENSIONS

3.1 The dimensions for dotting pen shall be as shown in Fig. 1.

3.1.1 The figure is intended only to illustrate the dimensions and design details are left to the discretion of manufacturer so long as the specified dimensions are maintained.

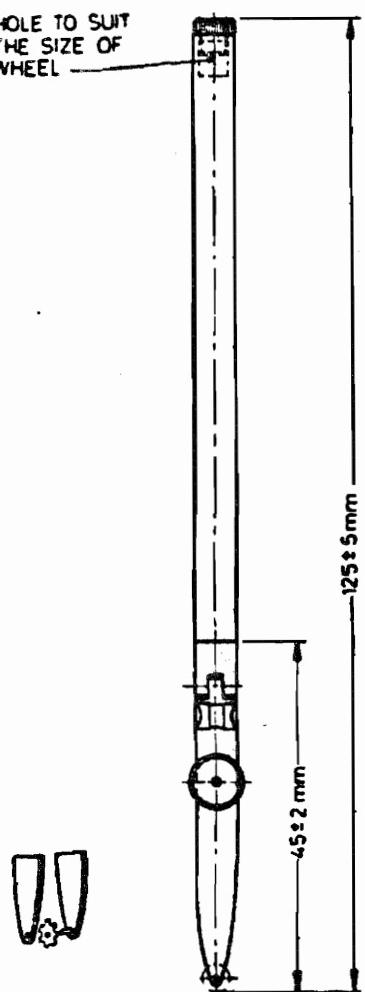


FIG. 1 DIMENSIONS FOR DOTTING PEN

3.2 The threads on the dotting pen and in holder (if any) shall be M3.

3.3 The design of the drawing wheels shall be such as to comply with the requirements of the types of dotted lines specified in IS : 696-1960*.

4. GENERAL REQUIREMENTS

4.1 The nibs shall have a provision for interchangeability of different types of wheels with a screw.

5. WORKMANSHIP AND FINISH

5.1 The drawing wheel shall be hardened and tempered.

5.2 The handles shall be smooth and well-finished.

5.3 When the wheels are made from carbon steel, they shall be chromium plated according to Service Grade No. 2 of IS : 1068-1968†.

6. SCREWS

6.1 The different screws used with dotting pen shall conform to the requirements specified in IS : 3222 (Part I)-1966‡.

7. TESTS

7.1 Dimensional Test — The dotting pens shall be tested for conformity with the requirements of dimensions as specified in 3.1.

7.2 Hardness Test — The drawing wheel shall be tested for hardness as specified in 2.3.

7.3 Functional Test — The dotting pens shall be tested to ensure that they draw dots or dashes or both of uniform thickness and at regular intervals complying with the requirements of IS : 696-1960*.

8. MARKING

8.1 The dotting pens shall be marked with the manufacturer's name or trade-mark at a suitable place.

*Code of practice for general engineering drawings (revised).

†Specification for electroplated coatings of nickel and chromium on iron and steel (first revision).

‡Specification for instruments screw: Part I Fasteners for drawing instruments.

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8.1.1 Dotting pens may also be marked with the ISI Certification Mark.

NOTE— The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

9. PACKING

9.1 Dotting pens shall be first wrapped in paper and then packed in a suitable carton.

INTERNATIONAL SYSTEM OF UNITS (SI UNITS)

Base Units

| Quantity | Unit | Symbol |
|---------------------------|----------|--------|
| Length | metre | m |
| Mass | kilogram | kg |
| Time | second | s |
| Electric current | ampere | A |
| Thermodynamic temperature | kelvin | K |
| Luminous intensity | candela | cd |
| Amount of substance | mole | mol |

Supplementary Units

| Quantity | Unit | Symbol |
|-------------|-----------|--------|
| Plane angle | radian | rad |
| Solid angle | steradian | sr |

Derived Units

| Quantity | Unit | Symbol | Conversion |
|----------------------|---------|--------|---------------------------------|
| Force | newton | N | 1 N = 1 kg·m/s ² |
| Energy | joule | J | 1 J = 1 N·m |
| Power | watt | W | 1 W = 1 J/s |
| Flux | weber | Wb | 1 Wb = 1 V·s |
| Flux density | tesla | T | 1 T = 1 Wb/m ² |
| Frequency | hertz | Hz | 1 Hz = 1 c/s (s ⁻¹) |
| Electric conductance | siemens | S | 1 S = 1 A/V |
| Pressure, stress | pascal | Pa | 1 Pa = 1 N/m ² |

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